Amendments to the Claims:

This listing of claims will replace all prior versions, and listings of claims in the application:

Listing of Claims:

Claim 1. (Previously Presented) A method for modifying the glycosylation pattern of a glycopeptide comprising an acceptor moiety for a first fucosyltransferase, said method comprising:

(a) contacting the glycopeptide with a reaction mixture that comprises a fucose donor moiety and the first fucosyltransferase under appropriate conditions *in vitro* to transfer fucose from the fucose donor moiety to the acceptor moiety, such that the glycopeptide has a substantially uniform fucosylation pattern;

wherein said acceptor moiety comprises a member selected from Galβ1,4GlcNAc-OR and NeuAcα2,3Galβ1,4GlcNAc-OR, wherein R is an amino acid, a saccharide, an oligosaccharide or an aglycon group having at least one carbon atom and is linked to or is part of a glycopeptide;

wherein said first fucosyltransferase is eukaryotic, lacks a membrane anchoring domain, and is a member selected from FucT-IV, FucT-V, FucT-VI, FucT-VII, and combinations thereof.

Claim 2. (Previously Presented) The method according to claim **1**, wherein the glycopeptide comprises a second acceptor moiety for a second fucosyltransferase, and the method further comprises:

(b) contacting the glycopeptide with a reaction mixture that comprises a fucose donor moiety and the second fucosyltransferase under appropriate conditions *in vitro* to transfer fucose from the fucose donor moiety to the acceptor moiety, such that the glycopeptide has a substantially uniform fucosylation pattern.

Claim 3. (Previously presented) The method according to claim **2**, wherein the glycopeptide is contacted with the first fucosyltransferase and the second fucosyltransferase simultaneously.

Claim 4. (Previously presented) The method according to claim **2**, wherein the glycopeptide is contacted with the first fucosyltransferase and the second fucosyltransferase sequentially without isolation of product resulting from contacting with the first fucosyltransferase.

Claim 5. (Cancelled)

Claim 6. (Previously presented) The method according to claim **2**, wherein the second fucosyltransferase is a member selected from FucT-IV, FucT-V, FucT-VI, FucT-VII and combinations thereof.

Claim 7. (Cancelled)

Claim 8. (Previously presented) The method according to claim **1**, wherein the fucosyltransferase is recombinantly produced.

Claim 9. (Cancelled)

Claim 10. (Previously presented) The method according to claim **1**, wherein at least about 80% of the acceptor moieties on the glycopeptide are fucosylated.

Claim 11. (Previously presented) The method according to claim **1**, wherein the glycopeptide is reversibly immobilized on a solid support.

Claim 12. (Previously presented) The method according to claim **11**, wherein the solid support is an affinity chromatography medium.

Claim 13. (Previously presented) The method according to claim **1**, wherein the glycopeptide is a full-length glycopeptide.

Claim 14. (Previously presented) The method according to claim **1**, wherein the glycopeptide is a fragment of a full length glycopeptide comprising an active site of the full-length glycopeptide.

Claim 15. (Previously presented) The method according to claim **1**, wherein the glycopeptide is an IgG chimera.

Claim 16. (Previously presented) The method according to claim **1**, wherein the glycopeptide is a member selected from a hormone, a growth factor, an enzyme, an enzyme inhibitor, a cytokine, a receptor, a ligand, and a monoclonal antibody.

Claim 17. (Previously presented) The method according to claim **1**, wherein the glycopeptide is on a cell.

Claim 18. (Cancelled)

Claim 19. (Previously presented) The method according to claim **1**, wherein the fucose donor moiety is GDP-fucose.

Claim 20. (Previously presented) The method according to claim **1**, further comprising, prior to step (a), contacting said glycopeptide with a glycosyltransferase other than a fucosyltransferase and a donor moiety other than a fucose donor moiety, thereby glycosylating the glycopeptide with a glycosyl moiety other than a fucose unit.

Claim 21. (Previously presented) The method according to claim **20**, wherein the glycosyltransferase is a member selected from the group consisting of galactosyltransferase, sialyltransferase and combinations thereof.

Claim 22. (Withdrawn) A composition comprising a glycopeptide fucosylated according to the method of claim **1**.

Claim 23. (Withdrawn) The composition of claim **22**, wherein at least 80% of the acceptor moieties on the glycopeptide are fucosylated.

Claim 24. (Withdrawn) The composition of claim **22**, wherein glycopeptide is attached to a solid support.

Claim 25. (Withdrawn) The composition of claim **24**, wherein the solid support is an affinity chromatography medium.

Claim 26. (Withdrawn) The composition of claim **22**, wherein the glycopeptide is a full-length glycopeptide.

Claim 27. (Withdrawn) The composition of claim **22**, wherein the glycopeptide comprises Fucα1,2Galβ1-OR, Galβ1,3/4(Fucα1,4/3)GlcNAc-OR, NeuAcα2,3Galβ1,3/4(Fucα1,3/4)GlcNAc-OR, Fucα1,2Galβ1,3/4(Fucα1,4/3)GlcNAcβ-OR wherein R is an amino acid, a saccharide, an oligosaccharide or an aglycon group having at least one carbon atom and is linked to or is part of a glycopeptide.

Claim 28. (Withdrawn) The composition of claim **22**, wherein the glycopeptide comprises NeuAcα2,3Galβ1,3/4(Fucα1,3/4)GlcNAc-OR, wherein R is an amino acid, a saccharide, an oligosaccharide or an aglycon group having at least one carbon atom and is linked to or is part of a glycopeptide.

Claim 29. (Withdrawn) The composition of claim **22**, wherein the glycopeptide is a hormone, a growth factor, an enzyme, an enzyme inhibitor, a cytokine, a receptor, a ligand, or a monoclonal antibody.

Claim 30. (Withdrawn) The composition of claim **22**, wherein the glycopeptide is on a cell.

Claim 31. (Previously Presented) A method of producing a recombinant glycopeptide having a fucosylation pattern that is substantially identical to a fucosylated glycopeptide having a known fucosylation pattern, said method comprising:

(a) contacting the recombinant glycopeptide with a reaction mixture that comprises a fucose donor moiety and a first fucosyltransferase, under appropriate conditions *in vitro* to transfer fucose from the fucose donor moiety to a fucose acceptor moiety on said recombinant glycopeptide, thereby producing a fucosylated recombinant glycopeptide

wherein said acceptor moiety comprises a member selected from Galβ1,4GlcNAc-OR and NeuAcα2,3Galβ1,4GlcNAc-OR, wherein R is an amino acid, a saccharide, an oligosaccharide or an aglycon group having at least one carbon atom and is linked to or is part of a glycopeptide;

wherein said first fucosyltransferase is eukaryotic, lacks a membrane anchoring domain, and is a member selected from FucT-IV, FucT-V, FucT-VI, FucT-VII, and combinations thereof; and

(b) terminating the transfer of the fucose to the fucose acceptor when the fucosylation pattern substantially identical to the known fucosylation pattern is obtained.

Claim 32. (Previously presented) The method according to claim **31**, further comprising:

(c) assaying the fucosylation pattern of the fucosylated recombinant glycopeptide, thereby determining whether the fucosylation pattern is substantially identical to the known fucosylation pattern.

Claim 33. (Previously presented) The method according to claim **31**, wherein the terminating is due to exhausting in the reaction mixture a member selected from the group consisting of the fucosyltransferase, the fucose donor moiety, the fucose acceptor quench with a chelator and combinations thereof.

Claim 34. (Previously Presented) The method according to claim **31**, wherein the glycopeptide comprises a second acceptor moiety for a second fucosyltransferase, and the method further comprises contacting the glycopeptide with a reaction mixture that comprises a fucose donor moiety and the second fucosyltransferase under appropriate conditions *in vitro* to transfer fucose from the fucose donor moiety to the second acceptor moiety.

Claim 35. (Previously presented) The method according to claim **34**, wherein the glycopeptide is contacted with the first fucosyltransferase and the second fucosyltransferase simultaneously.

Claim 36. (Previously presented) The method according to claim **34**, wherein the glycopeptide is contacted with the first fucosyltransferase and the second fucosyltransferase sequentially without isolation of product resulting from contacting with the first fucosyltransferase.

Claim 37. (Cancelled)

Claim 38. (Previously presented) The method according to claim **34**, wherein the second fucosyltransferase is eukaryotic and a member selected from FucT-IV, FucT-V, FucT-VI, FucT-VII and combinations thereof.

Claim 39. (Cancelled)

Claim 40. (Previously presented) The method according to claim **31**, wherein the fucosyltransferase is recombinantly produced.

Claim 41. (Cancelled)

Claim 42. (Previously presented) The method according to claim **31**, wherein at least about 80% of the acceptor moieties on the glycopeptide are fucosylated.

Claim 43. (Previously presented) The method according to claim **31**, wherein the glycopeptide is reversibly immobilized on a solid support.

Claim 44. (Previously presented) The method according to claim **31**, wherein the solid support is an affinity chromatography medium.

Claim 45. (Previously presented) The method according to claim **31**, wherein the glycopeptide is a full-length glycopeptide.

Claim 46. (Previously presented) The method according to claim **31**, wherein the glycopeptide is a fragment of a full length glycopeptide comprising an active site of the full-length glycopeptide.

Claim 47. (Previously presented) The method according to claim **31**, wherein the glycopeptide is an IgG chimera.

Claim 48. (Previously presented) The method according to claim **31**, wherein the glycopeptide is a member selected from a hormone, a growth factor, an enzyme, an enzyme inhibitor, a cytokine, a receptor, a ligand, and a monoclonal antibody.

Claim 49. (Previously presented) The method according to claim **31** wherein the glycopeptide is on a cell.

Claim 50. (Cancelled)

Claim 51. (Previously presented) The method according to claim **31**, wherein the fucose donor moiety is GDP-fucose.

Claim 52. (Previously Presented) The method according to claim **31**, further comprising, prior to step (a), contacting said glycopeptide with a glycosyltransferase other than a fucosyltransferase and a donor moiety other than a fucose donor moiety *in vitro*, thereby glycosylating the glycopeptide with a glycosyl moiety other than a fucose unit.

Claim 53. (Previously presented) The method according to claim **52**, wherein the glycosyltransferase is a member selected from the group consisting of galactosyltransferase, sialyltransferase and combinations thereof.

Claim 54. (Previously Presented) A large-scale method for modifying the glycosylation pattern of a glycopeptide comprising an acceptor moiety for a first fucosyltransferase, said method comprising:

contacting at least about 500 mg of glycopeptide with a reaction mixture that comprises a fucose donor moiety and the first fucosyltransferase under appropriate conditions *in vitro* to transfer fucose from the fucose donor moiety to the acceptor moiety, such that the glycopeptide has a substantially uniform fucosylation pattern.

Claim 55. (Previously Presented) A large-scale method of producing a recombinant glycopeptide having a fucosylation pattern that is substantially identical to a fucosylated glycopeptide having a known fucosylation pattern, said method comprising:

(a) contacting at least about 500 mg of the recombinant glycopeptide with a reaction mixture that comprises a fucose donor moiety and the fucosyltransferase under appropriate conditions *in vitro* to transfer fucose from the fucose donor moiety to a fucose acceptor moiety on said recombinant glycopeptide, thereby producing a fucosylated recombinant glycopeptide; and

(b) terminating the transfer of the fucose to the fucose acceptor when the fucosylation pattern substantially identical to the known fucosylation pattern is obtained.

Claim 56. (Cancelled)

Claim 57. (Cancelled)

Claim 58. (Cancelled)

Claim 59. (Cancelled)

Claim 60. (Cancelled)

Claim 61. (Cancelled)

Claim 62. (Cancelled)

Claim 63. (Cancelled)

Claim 64. (Cancelled)

Claim 65. (Cancelled)

Claim 66. (Previously Presented) A method for modifying the glycosylation pattern of a glycopeptide comprising an acceptor moiety for a first fucosyltransferase, wherein said first fucosyltransferase is eukaryotic and lacks a membrane anchoring domain, said method comprising:

(a) contacting the glycopeptide with a reaction mixture that comprises a fucose donor moiety and the first fucosyltransferase under appropriate conditions *in vitro* to transfer fucose from the fucose donor moiety to the acceptor moiety, such that the glycopeptide has a substantially uniform fucosylation pattern;

wherein the glycopeptide comprises a second acceptor moiety for a second fucosyltransferase, and

(b) contacting the glycopeptide with a reaction mixture that comprises a fucose donor moiety and the second fucosyltransferase under appropriate conditions *in vitro* to transfer fucose from the fucose donor moiety to the acceptor moiety, such that the glycopeptide has a substantially uniform fucosylation pattern.

Claim 67. (Previously Presented) A method for modifying the glycosylation pattern of a glycopeptide comprising an acceptor moiety for a first fucosyltransferase, wherein said first

fucosyltransferase is eukaryotic and lacks a membrane anchoring domain, said method comprising:

(a) contacting the glycopeptide with a reaction mixture that comprises a fucose donor moiety and the first fucosyltransferase under appropriate conditions *in vitro* to transfer fucose from the fucose donor moiety to the acceptor moiety, such that the glycopeptide has a substantially uniform fucosylation pattern;

wherein the glycopeptide comprises a second acceptor moiety for a second fucosyltransferase; and

(b) contacting the glycopeptide with a reaction mixture that comprises a fucose donor moiety and the second fucosyltransferase under appropriate conditions to transfer fucose from the fucose donor moiety to the acceptor moiety, such that the glycopeptide has a substantially uniform fucosylation pattern;

wherein the glycopeptide is contacted with the first fucosyltransferase and the second fucosyltransferase simultaneously.

Claim 68. (Previously Presented) A method for modifying the glycosylation pattern of a glycopeptide comprising an acceptor moiety for a first fucosyltransferase, wherein said first fucosyltransferase is eukaryotic and lacks a membrane anchoring domain, said method comprising:

(a) contacting the glycopeptide with a reaction mixture that comprises a fucose donor moiety and the first fucosyltransferase under appropriate conditions *in vitro* to transfer fucose from the fucose donor moiety to the acceptor moiety, such that the glycopeptide has a substantially uniform fucosylation pattern;

wherein the glycopeptide comprises a second acceptor moiety for a second fucosyltransferase, and

(b) contacting the glycopeptide with a reaction mixture that comprises a fucose donor moiety and the second fucosyltransferase under appropriate conditions to transfer fucose from the fucose donor moiety to the acceptor moiety, such that the glycopeptide has a substantially uniform fucosylation pattern; and

wherein the second fucosyltransferase is a member selected from FucT-IV, FucT-V, FucT-VI, FucT-VII and combinations thereof.

Claim 69. (Cancelled)

Claim 70. (Previously Presented) A method for modifying the glycosylation pattern of a glycopeptide comprising an acceptor moiety for a first fucosyltransferase, wherein said first fucosyltransferase is eukaryotic and lacks a membrane anchoring domain, said method comprising:

(a) contacting the glycopeptide with a reaction mixture that comprises a fucose donor moiety and the first fucosyltransferase under appropriate conditions *in vitro* to transfer fucose from the fucose donor moiety to the acceptor moiety, such that the glycopeptide has a substantially uniform fucosylation pattern;

wherein the glycopeptide is a fragment of a full length glycopeptide comprising an active site of the full-length glycopeptide.

Claim 71. (Previously Presented) A method for modifying the glycosylation pattern of a glycopeptide comprising an acceptor moiety for a first fucosyltransferase, wherein said first fucosyltransferase is eukaryotic and lacks a membrane anchoring domain, said method comprising:

(a) contacting the glycopeptide with a reaction mixture that comprises a fucose donor moiety and the first fucosyltransferase under appropriate conditions *in vitro* to transfer fucose from the fucose donor moiety to the acceptor moiety, such that the glycopeptide has a substantially uniform fucosylation pattern;

wherein the glycopeptide is an IgG chimera.

Claim 72. (Previously Presented) A method for modifying the glycosylation pattern of a glycopeptide comprising an acceptor moiety for a first fucosyltransferase, wherein said first fucosyltransferase is eukaryotic and lacks a membrane anchoring domain, said method comprising:

(a) contacting the glycopeptide with a reaction mixture that comprises a fucose donor moiety and the first fucosyltransferase under appropriate conditions *in vitro* to transfer fucose from the fucose donor moiety to the acceptor moiety, such that the glycopeptide has a substantially uniform fucosylation pattern;

wherein the glycopeptide is a hormone, a growth factor, an enzyme, an enzyme inhibitor, a cytokine, and a receptor.

Claim 73. (Previously Presented) A method for modifying the glycosylation pattern of a glycopeptide comprising an acceptor moiety for a first fucosyltransferase, wherein said first fucosyltransferase is eukaryotic and lacks a membrane anchoring domain, said method comprising:

(a) contacting the glycopeptide with a reaction mixture that comprises a fucose donor moiety and the first fucosyltransferase under appropriate conditions *in vitro* to transfer fucose from the fucose donor moiety to the acceptor moiety, such that the glycopeptide has a substantially uniform fucosylation pattern;

wherein the glycopeptide is on a cell.

Claim 74. (Previously Presented) A method for modifying the glycosylation pattern of a glycopeptide comprising an acceptor moiety for a first fucosyltransferase, wherein said first fucosyltransferase is eukaryotic and lacks a membrane anchoring domain, said method comprising:

contacting said glycopeptide with a glycosyltransferase selected from the group consisting of galactosyltransferase, sialyltransferase and combinations thereof, and a donor moiety other than a fucose donor moiety *in vitro*, thereby glycosylating the glycopeptide with a glycosyl moiety other than a fucose unit; and

(a) contacting the glycopeptide with a reaction mixture that comprises a fucose donor moiety and the first fucosyltransferase under appropriate conditions *in vitro* to

transfer fucose from the fucose donor moiety to the acceptor moiety, such that the glycopeptide has a substantially uniform fucosylation pattern.

Claim 75. (Previously Presented) A method of producing a recombinant glycopeptide having a fucosylation pattern that is substantially identical to a fucosylated glycopeptide having a known fucosylation pattern, said method comprising:

(a) contacting the recombinant glycopeptide with a reaction mixture that comprises a fucose donor moiety and a first fucosyltransferase, under appropriate conditions *in vitro* to transfer fucose from the fucose donor moiety to a fucose acceptor moiety on said recombinant glycopeptide, thereby producing a fucosylated recombinant glycopeptide, wherein said first fucosyltransferase is eukaryotic, lacks a membrane anchoring domain, and is a member selected from FucT-IV, FucT-V, FucT-VI, FucT-VII, and combinations thereof; and

wherein the glycopeptide comprises a second acceptor moiety for a second fucosyltransferase;

(b) contacting the glycopeptide with a reaction mixture that comprises a fucose donor moiety and the second fucosyltransferase under appropriate conditions to transfer fucose from the fucose donor moiety to the second acceptor moiety; and

(c) terminating the transfer of the fucose to the fucose acceptor when the fucosylation pattern substantially identical to the known fucosylation pattern is obtained.

Claim 76. (Previously Presented) A method of producing a recombinant glycopeptide having a fucosylation pattern that is substantially identical to a fucosylated glycopeptide having a known fucosylation pattern, said method comprising:

(a) contacting the recombinant glycopeptide with a reaction mixture that comprises a fucose donor moiety and a first fucosyltransferase, under appropriate conditions *in vitro* to transfer fucose from the fucose donor moiety to a fucose acceptor moiety on said recombinant glycopeptide, thereby producing a fucosylated recombinant glycopeptide, wherein said first fucosyltransferase is eukaryotic,

lacks a membrane anchoring domain, and is a member selected from FucT-IV, FucT-V, FucT-VI, FucT-VII, and combinations thereof; and

wherein the glycopeptide comprises a second acceptor moiety for a second fucosyltransferase;

(b) contacting the glycopeptide with a reaction mixture that comprises a fucose donor moiety and the second fucosyltransferase under appropriate conditions to transfer fucose from the fucose donor moiety to the acceptor moiety, such that the glycopeptide has a substantially uniform fucosylation pattern;

wherein the glycopeptide is contacted with the first fucosyltransferase and the second fucosyltransferase simultaneously; and

(c) terminating the transfer of the fucose to the fucose acceptor when the fucosylation pattern substantially identical to the known fucosylation pattern is obtained.

Claim 77. (Previously Presented) A method of producing a recombinant glycopeptide having a fucosylation pattern that is substantially identical to a fucosylated glycopeptide having a known fucosylation pattern, said method comprising:

(a) contacting the recombinant glycopeptide with a reaction mixture that comprises a fucose donor moiety and a first fucosyltransferase, under appropriate conditions *in vitro* to transfer fucose from the fucose donor moiety to a fucose acceptor moiety on said recombinant glycopeptide, thereby producing a fucosylated recombinant glycopeptide, wherein said first fucosyltransferase is eukaryotic, lacks a membrane anchoring domain, and is a member selected from FucT-IV, FucT-V, FucT-VI, FucT-VII, and combinations thereof; and

wherein the glycopeptide comprises a second acceptor moiety for a second fucosyltransferase;

(b) contacting the glycopeptide with a reaction mixture that comprises a fucose donor moiety and the second fucosyltransferase under appropriate conditions *in vitro* to transfer fucose from the fucose donor moiety to the acceptor moiety, such that the glycopeptide has a substantially uniform fucosylation pattern; and

wherein the second fucosyltransferase is a member selected from FucT-IV, FucT-V, FucT-VI, FucT-VII, and combinations thereof; and

(c) terminating the transfer of the fucose to the fucose acceptor when the fucosylation pattern substantially identical to the known fucosylation pattern is obtained.

Claim 78. (Cancelled)

Claim 79. (Previously Presented) A method of producing a recombinant glycopeptide having a fucosylation pattern that is substantially identical to a fucosylated glycopeptide having a known fucosylation pattern, said method comprising:

(a) contacting the recombinant glycopeptide with a reaction mixture that comprises a fucose donor moiety and a first fucosyltransferase, under appropriate conditions *in vitro* to transfer fucose from the fucose donor moiety to a fucose acceptor moiety on said recombinant glycopeptide, thereby producing a fucosylated recombinant glycopeptide, wherein said first fucosyltransferase is eukaryotic, lacks a membrane anchoring domain, and is a member selected from FucT-IV, FucT-V, FucT-VI, FucT-VII, and combinations thereof; and

wherein the glycopeptide is a fragment of a full length glycopeptide comprising an active site of the full-length glycopeptide; and

(b) terminating the transfer of the fucose to the fucose acceptor when the fucosylation pattern substantially identical to the known fucosylation pattern is obtained.

Claim 80. (Previously Presented) A method of producing a recombinant glycopeptide having a fucosylation pattern that is substantially identical to a fucosylated glycopeptide having a known fucosylation pattern, said method comprising:

(a) contacting the recombinant glycopeptide with a reaction mixture that comprises a fucose donor moiety and a first fucosyltransferase, under appropriate conditions *in vitro* to transfer fucose from the fucose donor moiety to a fucose acceptor moiety on said recombinant glycopeptide, thereby producing a fucosylated recombinant glycopeptide, wherein said first fucosyltransferase is eukaryotic,

lacks a membrane anchoring domain, and is a member selected from FucT-IV, FucT-V, FucT-VI, FucT-VII, and combinations thereof; and

wherein the glycopeptide is an IgG chimera; and

(b) terminating the transfer of the fucose to the fucose acceptor when the fucosylation pattern substantially identical to the known fucosylation pattern is obtained.

Claim 81. (Previously Presented) A method of producing a recombinant glycopeptide having a fucosylation pattern that is substantially identical to a fucosylated glycopeptide having a known fucosylation pattern, said method comprising:

(a) contacting the recombinant glycopeptide with a reaction mixture that comprises a fucose donor moiety and a first fucosyltransferase, under appropriate conditions *in vitro* to transfer fucose from the fucose donor moiety to a fucose acceptor moiety on said recombinant glycopeptide, thereby producing a fucosylated recombinant glycopeptide, wherein said first fucosyltransferase is eukaryotic, lacks a membrane anchoring domain, and is a member selected from FucT-IV, FucT-V, FucT-VI, FucT-VII, and combinations thereof; and

wherein the glycopeptide is a hormone, a growth factor, an enzyme, an enzyme inhibitor, a cytokine, and a receptor; and

(b) terminating the transfer of the fucose to the fucose acceptor when the fucosylation pattern substantially identical to the known fucosylation pattern is obtained.

Claim 82. (Previously Presented) A method of producing a recombinant glycopeptide having a fucosylation pattern that is substantially identical to a fucosylated glycopeptide having a known fucosylation pattern, said method comprising:

(a) contacting said glycopeptide with a glycosyltransferase other than a fucosyltransferase and a donor moiety other than a fucose donor moiety, thereby glycosylating the glycopeptide with a glycosyl moiety other than a fucose unit, wherein the glycosyltransferase is a member selected from the group consisting of galactosyltransferase, sialyltransferase and combinations thereof

(b) contacting the recombinant glycopeptide with a reaction mixture that comprises a fucose donor moiety and a first fucosyltransferase, under appropriate conditions *in vitro* to transfer fucose from the fucose donor moiety to a fucose acceptor moiety on said recombinant glycopeptide, thereby producing a fucosylated recombinant glycopeptide, wherein said first fucosyltransferase is eukaryotic, lacks a membrane anchoring domain, and is a member selected from FucT-IV, FucT-V, FucT-VI, FucT-VII, and combinations thereof; and

(c) terminating the transfer of the fucose to the fucose acceptor when the fucosylation pattern substantially identical to the known fucosylation pattern is obtained.

Claim 83. (Previously Presented) A method for modifying the glycosylation pattern of a glycopeptide comprising an acceptor moiety for a first fucosyltransferase, wherein said first fucosyltransferase is eukaryotic, lacks a membrane anchoring domain, and is FucT-VI, said method comprising:

(a) contacting the glycopeptide with a reaction mixture that comprises a fucose donor moiety and the first fucosyltransferase under appropriate conditions *in vitro* to transfer fucose from the fucose donor moiety to the acceptor moiety, such that the glycopeptide has a substantially uniform fucosylation pattern.

Claim 84. (Previously Presented) A method for modifying the glycosylation pattern of a glycopeptide comprising an acceptor moiety for a first fucosyltransferase, wherein said first fucosyltransferase is eukaryotic, lacks a membrane anchoring domain, and is FucT-VII, said method comprising:

(a) contacting the glycopeptide with a reaction mixture that comprises a fucose donor moiety and the first fucosyltransferase under appropriate conditions *in vitro* to transfer fucose from the fucose donor moiety to the acceptor moiety, such that the glycopeptide has a substantially uniform fucosylation pattern.

Claim 85. (Previously Presented) A method of producing a recombinant glycopeptide having a fucosylation pattern that is substantially identical to a fucosylated glycopeptide having a known fucosylation pattern, said method comprising:

(a) contacting the recombinant glycopeptide with a reaction mixture that comprises a fucose donor moiety and a first fucosyltransferase, under appropriate conditions *in vitro* to transfer fucose from the fucose donor moiety to a fucose acceptor moiety on said recombinant glycopeptide, thereby producing a fucosylated recombinant glycopeptide;

wherein said first fucosyltransferase is eukaryotic, lacks a membrane anchoring domain, and is FucT-VI; and

(b) terminating the transfer of the fucose to the fucose acceptor when the fucosylation pattern substantially identical to the known fucosylation pattern is obtained.

Claim 86. (Previously Presented) A method of producing a recombinant glycopeptide having a fucosylation pattern that is substantially identical to a fucosylated glycopeptide having a known fucosylation pattern, said method comprising:

(a) contacting the recombinant glycopeptide with a reaction mixture that comprises a fucose donor moiety and a first fucosyltransferase, under appropriate conditions *in vitro* to transfer fucose from the fucose donor moiety to a fucose acceptor moiety on said recombinant glycopeptide, thereby producing a fucosylated recombinant glycopeptide;

wherein said first fucosyltransferase is eukaryotic, lacks a membrane anchoring domain, and is FucT-VII; and

(b) terminating the transfer of the fucose to the fucose acceptor when the fucosylation pattern substantially identical to the known fucosylation pattern is obtained.

Claim 87. (Previously Presented) The large scale, *in vitro* method according to claim **54**, wherein the glycopeptide comprises a second acceptor moiety for a second fucosyltransferase, and the method further comprises

(b) contacting the glycopeptide with a reaction mixture that comprises a fucose donor moiety and the second fucosyltransferase under appropriate conditions *in vitro* to transfer fucose from the fucose donor moiety to the acceptor moiety, such that the glycopeptide has a substantially uniform fucosylation pattern.

Claim 88. (Previously Presented) The large scale, *in vitro* method according to claim **87**, wherein the glycopeptide is contacted with the first fucosyltransferase and the second fucosyltransferase simultaneously.

Claim 89. (Previously Presented) The large scale, *in vitro* method according to claim **87**, wherein the glycopeptide is contacted with the first fucosyltransferase and the second fucosyltransferase sequentially without isolation of product resulting from contacting with the first fucosyltransferase.

Claim 90. (Previously Presented) The large scale, *in vitro* method according to claim **54**, wherein the first fucosyltransferase is a member selected from FucT-IV, FucT-VI, FucT-VII and combinations thereof.

Claim 91. (Previously Presented) The large scale, *in vitro* method according to claim **87**, wherein the second fucosyltransferase is a member selected from FucT-IV, FucT-V, FucT-VI, FucT-VII and combinations thereof.

Claim 92. (Previously Presented) The large scale, *in vitro* method according to claim **54**, wherein the fucosyltransferase is bacterial.

Claim 93. (Previously Presented) The large scale, *in vitro* method according to claim **54**, wherein the fucosyltransferase is recombinantly produced.

Claim 94. (Previously Presented) The large scale, *in vitro* method according to claim **54**, wherein the fucosyltransferase lacks a membrane anchoring domain.

Claim 95. (Previously Presented) The large scale, *in vitro* method according to claim **54**, wherein at least about 80% of the acceptor moieties on the glycopeptide are fucosylated.

Claim 96. (Previously Presented) The large scale, *in vitro* method according to claim **54**, wherein glycopeptide is reversibly immobilized on a solid support.

Claim 97. (Previously Presented) The large scale, *in vitro* method according to claim **96**, wherein the solid support is an affinity chromatography medium.

Claim 98. (Previously Presented) The large scale, *in vitro* method according to claim **54**, wherein the glycopeptide is a full-length glycopeptide.

Claim 99. (Previously Presented) The large scale, *in vitro* method according to claim **54**, wherein the glycopeptide is a fragment of a full length glycopeptide comprising an active site of the full-length glycopeptide.

Claim 100. (Previously Presented) The large scale, *in vitro* method according to claim **54**, wherein the glycopeptide is an IgG chimera.

Claim 101. (Previously Presented) The large scale, *in vitro* method according to claim **54**, wherein the glycopeptide is a hormone, a growth factor, an enzyme, an enzyme inhibitor, a cytokine, a receptor, a ligand, or a monoclonal antibody.

Claim 102. (Previously Presented) The large scale, *in vitro* method according to claim **54**, wherein the glycopeptide is on a cell.

Claim 103. (Previously Presented) The large scale, *in vitro* method according to claim **54**, wherein the acceptor moiety comprises Galβ1-OR, Galβ1,3/4GlcNAc-OR, NeuAcα2,3Galβ1,3/4GlcNAc-OR, wherein R is an amino acid, a saccharide, an oligosaccharide or an aglycon group having at least one carbon atom and is linked to or is part of a glycopeptide.

Claim 104. (Previously Presented) The large scale, *in vitro* method according to claim **54**, wherein the fucose donor moiety is GDP-fucose.

Claim 105. (Previously Presented) The large scale, *in vitro* method according to claim **54**, further comprising, prior to step (a), contacting said glycopeptide with a glycosyltransferase other than a fucosyltransferase and a donor moiety other than a fucose donor moiety, thereby glycosylating the glycopeptide with a glycosyl moiety other than a fucose unit.

Claim 106. (Previously Presented) The large scale, *in vitro* method according to claim **105**, wherein the glycosyltransferase is a member selected from the group consisting of galactosyltransferase, sialyltransferase and combinations thereof.